REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-3, 5 and 9 are pending in this application. No claim amendments are presented, thus, no new matter is presented.

In the outstanding Official Action, Claims 1 and 3 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,991,618 to Hall in view of U.S. Patent No. 6,792,248 to Naghian; and Claims 2, 5 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Hall in view of U.S. Patent No. 6,374,117 B1 to Denkert et al. (hereinafter Denkert).

In response to the rejection of Claims 1 and 3 as unpatentable over Hall in view of Naghian, Applicants respectfully submit that the references fail to teach or suggest features of independent Claims 1 and 3 for which each is asserted.

Independent Claim 1 relates to a transmission power control method in a radio communication system comprising a base station and mobile stations. Specifically, independent Claim 1, recites, *inter alia*, a transmission power control method, comprising:

> determining that a communication to be transmitted from the base station to the mobile station is either real-time traffic or non-real time traffic ***based on at least one of a transmission delay, maximum transmission count and reception error rate corresponding to the communication;***
> setting a transmission power margin to ***a first value if the communication is real-time traffic and a second value is the communication is non-real time traffic, wherein the first value is greater than the second value...***

Independent Claim 3, while directed to an alternative embodiment, recites substantially similar features. Accordingly, the remarks presented below are applicable to each of independent Claims 1 and 3.

As depicted in Figs. 6B-6C, for example, the method improves on previous power control methods by decreasing the power margin allocated to non-real-time communications, as compared to real-time communications. The method helps to more efficiently use system resources, while also decreasing the overall interference generated by the transmission of non-real-time communications.

Hall, the primary reference, describes a method and system for estimating a communication mode quality in a wireless communication system. Hall describes detecting a current communications mode of the subscriber unit, then determining a predetermined power margin requirement for the mode based on information retrieved from memory.[1]

Hall, however, fails to teach or suggest "determining that a communication to be transmitted from the base station to the mobile station is either real-time traffic or non-real time traffic ***based on at least one of a transmission delay, maximum retransmission count and reception error rate corresponding to the communication***," as recited in independent Claim 1.

As described at col. 2, line 49-col. 3, line 14 of Hall, a communication mode at the subscriber unit may be determined based on a detected data rate, which may be changed according to voice activity or a different level of communication service (e.g., e-mail or browsing the internet). Hall further describes that communication mode may be determined by a number of channels between the subscriber unit and the communication system infrastructure.

The amount of data transmitted between the subscriber unit and the communication infrastructure, however, is not analogous to a ***transmission delay, maximum retransmission count or reception error rate corresponding to the communication***, as recited in independent Claim 1. In contrast, the data rate, or number of channels between the subscriber

[1] Hall, col. 3, lines 10-33.

device and infrastructure, simply measures the amount of data over a period of time transmitted from the system to the subscriber unit and does not provide any of the detailed parameters noted above. More specifically, transmission delay, maximum retransmission count, and reception error rate are all parameters that can not be determined simply based on a detected data rate.

Therefore, Hall fails to teach or suggest "determining that a communication to be transmitted from the base station to the mobile station is either real-time traffic or non-real time traffic ***based on at least one of a transmission delay, maximum retransmission count and reception error rate corresponding to the communication***," as recited in independent Claim 1.

Naghian, the secondary reference, describes a power control method in a cellular communications system. Specifically, Naghian describes determining a transmission power margin and optimal power level, which may change for each connection and service class.[2]

Naghian, however, fails to teach or suggest "setting a transmission power margin to a ***first value if the communication is real-time traffic and a second value is the communication is non-real time traffic, wherein the first value is greater than the second value***," as recited in independent Claim 1.

In addressing this claimed feature, the Official Action relies on Fig. 2 and col. 4, lines 29-65 of Naghian. This cited portion of the reference describes how an optimum power level (Popt) and acceptable power margin may be determined for each quality of service (QoS) class. The Official Action further notes Naghian describes "how the transmission margin can be determined using real-time measurements."

However, at no point does Naghian teach or suggest setting a transmission power margin based on whether the traffic is real-time traffic or non-real-time traffic, much less that

[2] Naghian, Abstract.

one value is greater or less than the other. The Official Action points out that transmission margin may be determined using real-time measurements in combination with service class requirements. The "real-time measurements" noted in the Official Action are simply measurements of the communication link and do not indicate whether a communication between the base station and mobile device is real-time or non-real-time. Naghian, therefore, fails to teach or suggest that the QoS class indicates whether the communication is real-time or non-real-time, or that the power margin for a non-real-time communication may be set lower than that for a real-time communication, as recited in independent Claim 1.

Accordingly, Naghian fails to teach or suggest "setting a transmission power margin to a ***first value if the communication is real-time traffic and a second value is the communication is non-real time traffic, wherein the first value is greater than the second value***," as recited in independent Claim 1.

Thus, Hall and Naghian, neither alone, nor in combination, teach or suggest the above noted features recited in independent Claim 1, and Applicants respectfully request that the rejection of independent Claims 1 and 3 under 35 U.S.C. 103 be withdrawn.

The outstanding Official Action rejected Claims 2, 5 and 9 under 35 U.S.C. 103(a) as being unpatentable over Hall in view of Denkert. The Official Action cites Hall as disclosing the applications invention with the exception of the data retransmission steps recited in independent Claims 2, 5, and 9. The Official Action cites Denkert as disclosing this claimed feature and states that it would have been obvious at the time the invention was made to combine the cited references to arrive at Applicant's claims. Applicants respectfully traverse this rejection as Denkert fails to teach or suggest the claimed features for which it is asserted as a secondary reference under 35 U.S.C. 103.

Independent Claim 2 relates to a transmission power control method in a radio communication system comprising a base station and mobile stations in which data is

retransmitted (e.g., the same data is transmitted multiple times) when not received properly at the mobile station. As discussed at pp. 24-28 and Figs. 8-14, the base station alters the power transmission margin based on the number of retransmission attempts (counts) between the two devices. In this manner, the system is able to conserve resources by increasing the power margin only when the retransmission count increases.

Specifically, independent Claim 2 recites, *inter alia*, a transmission power control method,

> wherein a transmission power margin… ***is set so that the transmission power margin increases as the data retransmission count in an uplink or in a downlink increases.***

Independent Claims 5, and 9, while directed to alternative embodiments, recite substantially similar features. Accordingly, the arguments presented below are applicable to each of independent Claims 2, 5 and 9.

As noted above, the outstanding Official Action admits that Hall fails to teach or suggest the above-emphasized step of setting the transmission power based on a retransmission count in the uplink or downlink. In an attempt to remedy this deficiency, the Official Action relies on Denkert.

Denkert describes a method and system for controlling a transmit power level based upon queue delay for packets in a wireless packet data system. Specifically, Denkert describes that downlink transmit power is adapted based on a queue time of a data packet.[3]

Denkert, however, fails to teach or suggest setting a transmission power margin so that the transmission power margin increases ***as the data retransmission count*** in an uplink or in a downlink increases, as recited in independent Claim 2.

In addressing the previously presented arguments regarding this feature, the Official Action cites col. 3, lines 14-27 of Denkert and states that the reference describes "that as the

[3] Denkert, Abstract.

queue time of a particular data packet stored in a buffer approaches a threshold time, the transmit power for that packet can be increased (read the power margin increases) to reduce the remaining delay associated with receiving that packet at the other end of the connection." Thus, Denkert simply describes increasing transmit power for a stored data packet that is approaching a threshold time, and does not, at any point, teach or suggest increasing a transmission margin ***as the data retransmission count … increases***. More specifically, Denkert fails to teach or suggest maintaining a retransmission count for the data to be transmitted, much less adjusting the transmission power level ***based on the retransmission count***.

The Official Action further cites col. 4, line 59-col. 5, line 40, and states that Denkert described that "if the queuing delay is greater than a threshold, then the priority control can be set… to select another transmit power for the next transmission." Again, this cited portion of Denkert simply describes increasing transmission power of data if the packet is stored in the buffer for a given amount of time. This method of increasing transmission power, therefore, does so on the basis of the amount of time data has been stored in the buffer awaiting transmission, not based on ***a retransmission count***.

Therefore, Hall and Denkert, neither alone, nor in combination, teach or suggest setting a transmission power margin so that ***the transmission power margin increases as the data retransmission count*** in an uplink or in a downlink increases, as recited in independent Claim 2.

Accordingly, Applicants respectfully request that the rejection of independent Claims 2, 5 and 9 under 35 U.S.C. 103 be withdrawn.

Consequently, in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-3, 5 and 9, is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested

Respectfully submitted,

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